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Zoning Board of Adjustments
Great Falls, MT

Dear Members of the Board,

This letter is in regards to your review of the proposed Fox Solar and Portage Solar projects. I have modified an earlier letter sent in July to the County Commissioners to reflect some changes in these proposals.

I am a retired U.S. Forest Service landscape architect with more than 30 years of experience dealing with project proposals potentially impacting our scenery resources. These projects included power lines, roads, ski lodges, and timber sales. I am also a Great Falls resident who served in the past on the city's Design Review Board. Here are some questions and suggestions that may help you make an informed decision on the Fox and Portage solar farm proposals.

1. Do the proposed uses really conform with the broad objectives of SR-1 zoning or would they better fit in another zone and not require an exception to be made? They appear to be dissimilar inclusions of industry (heavy concentrations of steel and glass) proposed to be needlessly and thoughtlessly scattered into low density rural development. I believe they are better suited for industrial or agricultural zoning away from our population concentrations.
2. The proposed areas are surprisingly close to Great Falls and existing and future population expansion areas. Our flat and rolling unscreened topography makes both areas visible from many different viewpoints.
 - a. The proposed areas are both unscreened by existing vegetation. Looking at the Fox proposal, no amount of vegetative screening will ever make it blend in with surrounding SR-1 uses, especially as viewed from numerous existing and future residences looking down over the proposed site. A better location would be an area that is screened by both topography and vegetation. These are not in short supply.
 - b. The Portage Proposal has much more topographic screening and would not be seen by most nearby residences if properly mitigated, but it, too, has no vegetative screening and would be plainly visible from a nearly mile long section of 13th Street, especially by travelers heading north. It is also very plainly visible from the land to the east, which has residential potential and slopes towards the proposal.
3. Glare is a major issue. An article in the Great Falls Tribune dated 23 July, 2016, said that Jeffry Webber, an engineer with Cypress Creek Renewables, said there would be no glare to residences looking at the proposed sites from above. Has he made available the study(s) proving this to be the case? The original proposal talked of solar collection facilities producing light similar to that which bounces

off of lakes. Which is it? Even the computer visual simulations in Appendices 15 or 17 show glare coming off of the solar panels.

4. The shapes of both proposals maximize the use of each land parcel, while doing nothing to make them blend better with their surroundings. Heavy concentrations of glass and steel can be manipulated to round off square edges and avoid rectangular shapes that stand out on the landscape, especially from viewpoints looking down on the proposal. That is simply good design. If the projects are approved this should be a requirement.
5. Have the developers had a simple "seen area" analysis made that shows which landscapes look into the proposed development area? This allows a ready quantification of areas potentially impacted by these views, and potentially a more accurate disclosure of potential property value drops because of scenery impacts.
6. While the proponents of the project claim that there would be no reduction in property values by these proposals, there is no question in my mind the proposals would become very negative eyesore that would unnecessarily and needlessly impact existing views from many existing and potential residences.
7. I see no way of making the Fox Proposal work in light of the above problems. October-dated Appendices 15 and 17 address pictorially some proposals to mitigate visually with screening vegetation the Fox proposal. I only saw the proposal for the Fox addition and saw no proposal for visual mitigation of the Portage proposal. I have the following observations for both proposals:
 - a. Superior viewpoints cannot be adequately screened in the Fox proposal. The computer simulation shows conifer trees 20-30' in height at year 5 of the anticipated 30 year life of the project. That won't happen in Central Montana. Even using drip irrigation trees, 20-30' ponderosa pines will take at least 10 to 15 years, at best, to reach those heights. Please read my suggested mitigation measures later in this letter.
 - b. Glare of the solar panels and possible glare of the steel supports, if galvanized, will dominate views of residences throughout the project life.
8. The proposal does not meet the purposes of good zoning as described in Section 1 of the Cascade County Zoning Regulations:
 - a. 1.5 "Zone all properties with a view to conserving the value of buildings." The Fox proposal, especially, ignores the property values of nearby home owners. I do believe there will be some reduction in these values.
 - b. 1.6 "Protect residential, business, commercial, and industrial areas alike from harmful encroachment by incompatible uses and to ensure that land allocated to a class of uses shall not be usurped by inappropriate uses." In my view the Fox proposal is incompatible because of its scenic impacts on adjacent home owners. It can ruin current views that property owners assumed would be protected by SR-1 zoning. Proposal reports about an existing railroad, potential storage of railroad cars, existence of an ugly heavy equipment storage building, and the presence

of junk cars is, in my professional opinion, only an effort to make the proposal areas seem already visually trammelled. It is not, but the addition of the solar farms will certainly make it so.

- c. 1.10 "Foster a more rational pattern of relationship between residential, business, and industrial uses for the mutual benefit of all." These proposals are industrial uses. They may not smell, generate lots of traffic, or be noisy, but they look industrial and have definite scenic impacts on surrounding residential areas. Their dissonant inclusion in SR-1 is inconsistent with 1.10's discussion of rational patterns. Solar farms, unless adequately screened from concentrations of existing and future residences by topography and existing screening, should be located in industrial or agricultural areas.

- 9. If either or both of the projects are approved, mitigation of the scenic impacts of the approved project(s) should be required. There are several things that can be done to visually improve each project and lessen its scenery impacts:

Foreground Mitigation (viewpoints less than ¼ mile from project:

- i. Use non-glare steel supports for the glass solar panels. Bright and shiny galvanized steel is unacceptable. Are there options for the colors of the panels, as well as their level of reflectivity? Require the solar panels to have the best non-glare features available. Glare is always an issue and the industry has very likely addressed the problem with better non-glare alternatives. Metal housing of the panels should also be non-glare and earthtone color.
- ii. Use non-glare steel fencing for required fencing around the perimeter. Hot-dipped galvanized woven steel fencing ("cyclone" fencing) would be very visible. Require latex dipped or other methods to make it non-glare.
- iii. Public access roads with significant traffic can benefit from the planting of quick-growing shrubbery and tree screens. Require the use of a landscape architect or other landscape design professional with experience in mitigating scenery impacts, to make proposals that would break up, visually, the potential impacts of acres of glass and steel. Judicious placement of groups of trees and shrubs within the proposal area can also break up the "sea of glass" effect that would otherwise result. Drip irrigation and weeding and grass planting should be required throughout the life of the project if plantings are to grow rapidly and become effective. Use ponderosa pine and Siberian pea shrubs for quickest results.

- 1. In the Portage proposal, do not allow development on the north side of the project where panels can be seen from residences. This is typically a strip of land adjacent 33rd Avenue S. varying from 200 to 500' in depth that is mostly flat before dropping off to the south. An existing nearby

ridge should make this easy to accomplish. It should also be easy to avoid any visual impacts to the residences on the south side of the proposal along 40th Ave. They already have little or no impacts from the potential project. Visual impacts from 13th Street can be lessened by requiring the planting of groups of ponderosa pine and Siberian pea shrubs along the road. Such planting groups can help lessen impacts to future low density housing to the east of the project.

- iv. Middleground(1/4 to 3- 5 miles away from project)
 - v. Same mitigation as for foreground, but also include:
 - 1. Reshaping the solar panel arrays from rectangles to more organic shapes with rounded ages. Consider having a smaller group of panels with a visually dominant larger group, both with simple shapes that are not rectilinear. If the reflections from the current proposals will look like that of light bouncing off of lakes, make them resemble lakes and not sewage lagoons.

Lastly, there is the issue of fairness. Good zoning, and a real reluctance to make exceptions to existing zoning, allows the community to rely upon it as they invest their resources in homes and businesses and industry. They should not have to worry about the threat of dissimilar uses threatening their property values unless there is an over-riding real community need and interest. That is not the case with either of these two proposals.

Thank you for your volunteer service as members of this board. These are not easy decisions but this one, in my opinion, is straightforward and easy to justify. **Reject both proposals as currently proposed and suggest their relocation where existing screening, both from vegetation and topography, exists. As a minimum reject the Fox proposal for reasons already stated above. If either of the proposals are accepted, insist on needed visual mitigation recommended above.**

Solar power can have its place in Cascade county—in industrial or agriculture zoned areas that are carefully sited to avoid views from concentrations of residences and from major roads. It is very conceivable that smaller proposals of perhaps an acre or less, if well screened, can be accommodated in SR-1. The large scale of these current proposals do not fit in SR-1 settings. The industry knows this.

Sincerely,



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